

Apr. 10, 1923.

F. C. REILLY

1,451,112

CONTROLLER FOR ELECTRIC SIGNS

Filed Oct. 15, 1918

2 sheets-sheet 1

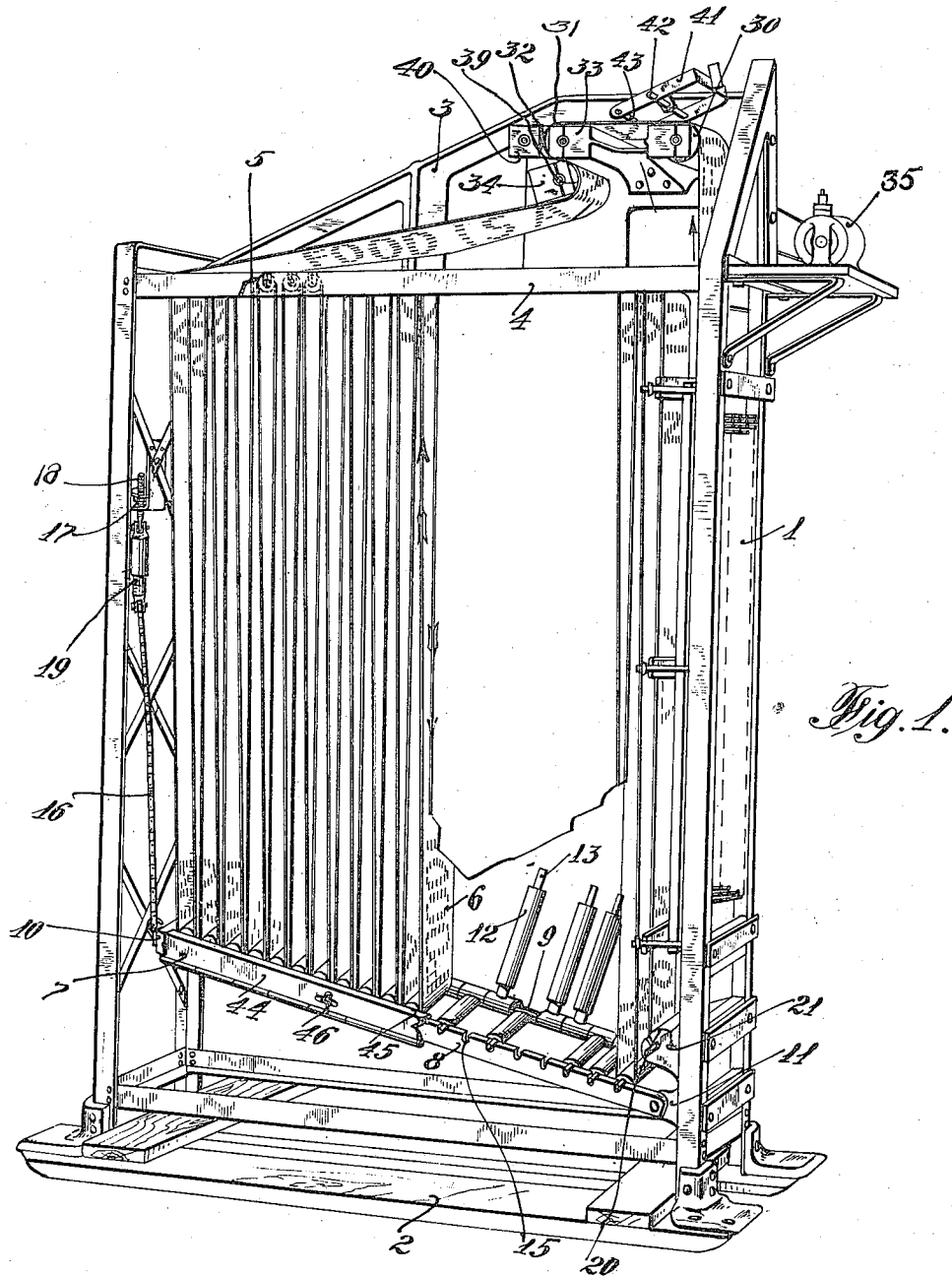


Fig. 1.

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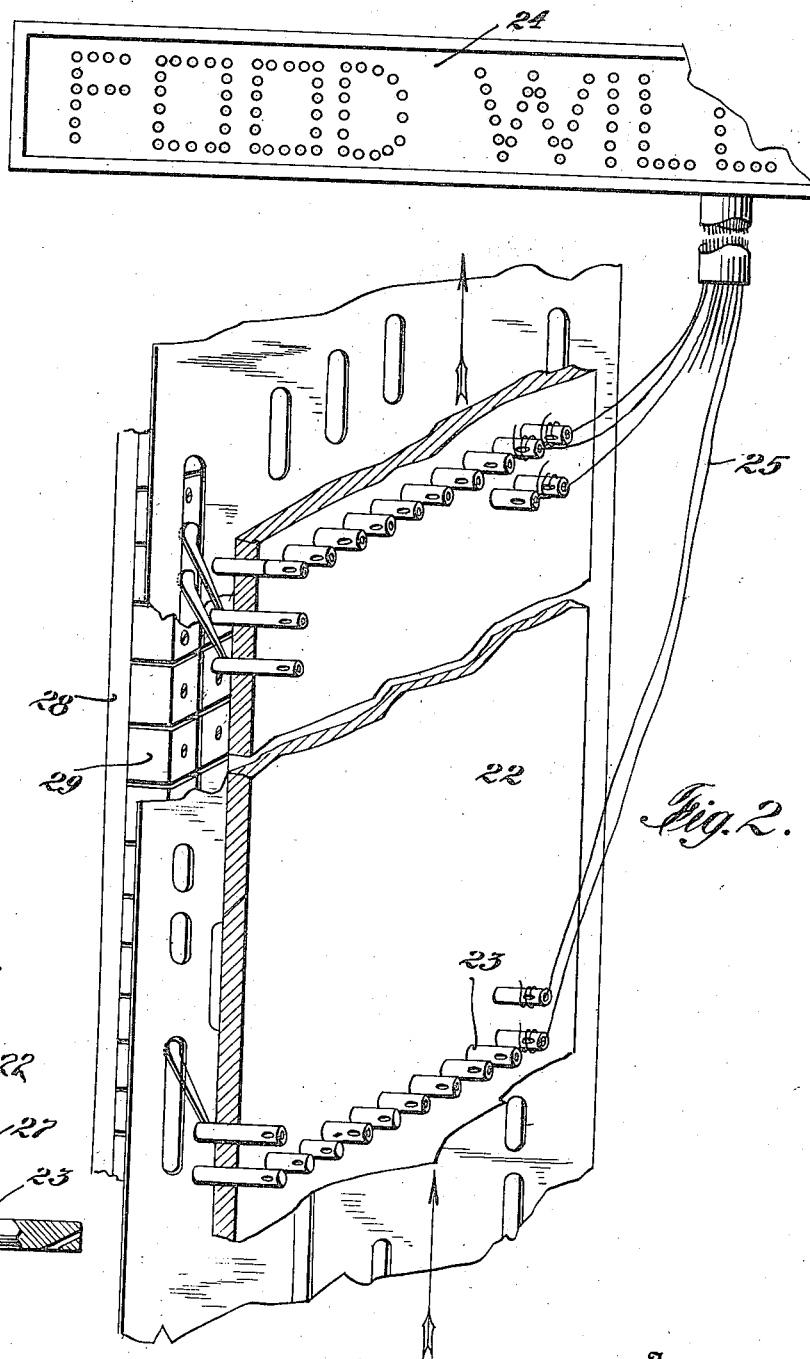


Fig. 2.

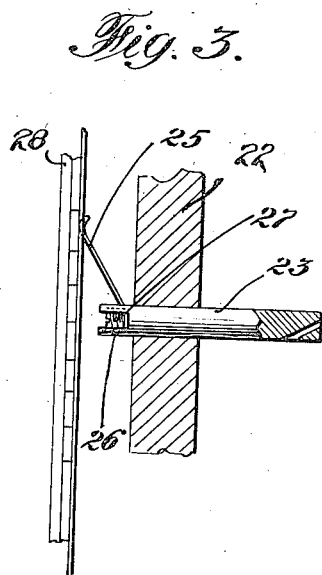


Fig. 3.

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Patented Apr. 10, 1923.

1,451,112

UNITED STATES PATENT OFFICE.

FRANK C. REILLY, OF NEW YORK, N. Y., ASSIGNOR TO JOSEPH I. KOPPEL, OF NEW YORK, N. Y.

CONTROLLER FOR ELECTRIC SIGNS.

Application filed October 15, 1918. Serial No. 258,286.

To all whom it may concern:

Be it known that I, FRANK C. REILLY, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in a Controller for Electric Signs, of which the following is a specification.

This invention relates to moving electric signs and more particularly to that type of moving electric sign known as a motor-graph.

The invention contemplates certain improvements over those shown, described and claimed in my Patent No. 1,119,371, patented December 1, 1914.

One of the objects of the invention is to provide new and improved means for storing or carrying the bulk of an endless band or ribbon of perforated insulating material employed in a machine of this character.

Another object of the invention is to provide means for carrying or storing the endless band or ribbon and conducting it from contact devices, and for returning it again to said contact devices, such that the slack of the ribbon is taken up and is prevented from becoming tangled or torn, or otherwise injured, thus increasing the life of the ribbon, and minimizing the cost of operation of the machine.

A still further object of the invention is to provide a carrying or storing means for the contact operating band or ribbon which permits of the ready insertion of the latter into the machine, and also permits a ready removal of said band or ribbon from the machine.

Other objects and aims of the invention, more or less specific than those referred to above, will be in part obvious and in part pointed out in the course of the following description of the elements, combinations, arrangements of parts and applications of principles, constituting the invention; and the scope of protection contemplated will be indicated in the appended claims.

In the accompanying drawings, wherein I have illustrated a preferred form of embodiment of my invention:

Figure 1 is a view in perspective, showing my improved machine.

Figure 2 is a view in perspective upon an enlarged scale, showing a portion of the apparatus; and

Figure 3 is a vertical sectional view, showing the manner of supporting the contact fingers.

Referring now to the drawings, wherein similar reference characters refer to similar parts throughout the several views thereof, the reference numeral 1 denotes the frame of the machine, the same comprising four uprights or risers, which are mounted upon base plates 2, said frame being substantially rectangular in form and suitably braced so that it presents a rigid structure. The frame carries at its upper end a super-structure 3, upon which is mounted certain of the operative parts of the apparatus. Extended between the upper rails 4 of the frame, and suitably journaled between said rails, is a series of rolls 5, which rolls form carriers for the upper convolutions or bends of the perforated endless band or ribbon 6, which determines the operation of the contact devices.

7 indicates a frame comprising a side bar 8 and a rod 9, and an end bar 10. This frame is pivotally mounted upon brackets 11 carried by the uprights which form a portion of the frame. Frame 7 carries a plurality of rolls 12 journaled upon shafts 13. Each of shafts 13 is provided with an apertured head portion, through which extends the rod 9, so that each roll has an independent pivotal mounting whereby they may be rocked or swung to the position shown in Figure 1 of the drawings.

The opposite ends of the shafts 13 are adapted, when the rolls are in normal position, to rest in grooves or slots 15, provided in the side bar 8, the construction being such that when the rolls are in normal position they lie parallel with the rolls 5 carried in the upper portion of the frame. The endless band 6 runs backward and forward over these rolls so that the entire part of such band between the contact board, hereafter to be described, is stored or carried within the frame upon the rolls ready to be drawn therefrom and carried over the contact board. The movable end of the frame 7 is suspended by means of a chain 16 from a hanger 17 supported upon the rear portion of the frame, an adjusting screw 18 being interposed in the connection of the chain 16 and the hanger, and I preferably provide a spring held scale 19 in such connection so that the amount of tension or strain exerted

by the chain 16 upon the frame 7 may be determined.

The object of the construction next above described is to provide means whereby any
5 desired amount of tension may be put upon the endless band as the same is passing in its convolute form over and between the two series of rolls.

20 indicates a roll journaled upon the shafts which rests in brackets 21 carried upon the uprights of the forward part of the machine, and the endless band 6, after passing through the last of the uppermost series of rolls, travels downward and then passes
15 about the roll 20, whence it passes upward through the contact devices.

Referring now to the contact making or switch apparatus, the reference numeral 22 denotes what may be termed a brush-plate,
20 said plate being carried upon the frame of the machine, and extending through this plate are the terminal members 23; it being understood that a terminal member is provided for each of the lamps, or groups of
25 lamps, upon the display board 24; lead wires connecting the terminal members 23 with the various lamps. Each of the terminal members 23, at its inner end, carries a contact finger or brush 25, which is inserted in
30 a slot 26 formed in the inner end of the contact member, and clamped in position therein as by means of the clamp nut 27.

Located directly behind the brush block 22 is a commutator board 28, which is formed
35 of insulating material, and provided with a plurality of blocks 29, each of which is independently mounted upon said board, and each of which is connected with one side of the electrical supply system. The brushes or
40 contact fingers 25 are spring urged in the direction of the blocks 29, it being understood that when the brushes are engaged with the adjacent commutator sections a circuit is closed to the lamps on the display
45 board.

The perforated band 6 in the present instance is passed in an upward direction between the brush board 22, and the contact members of the commutator board 28, and
50 each brush and its contact point is held out of electrical connection by the imperforated parts of the band. When, however, one of the perforations of the moving band is in registry with the end of the brush and its
55 contact block, the circuit is closed through the lamp with which said elements are electrically connected. Thus the movement of the band upward through the machine, and through this control mechanism, operates se-
60 lectively to open and close the circuits of the lamps upon the display board.

The endless band or ribbon 6, after passing through the controlling apparatus just described, passes over the roll 30, whence it
65 passes to the driving mechanism comprising

a pair of rollers 31 and 32 carried in the mountings 33 and 40; a suitable driving connection being provided to said drive rollers by means of the motor 35.

Thus it will be seen that by means of the
70 construction described the endless band may be continuously and progressively moved through the machine, and that the part of the ribbon not being engaged to operate the contact devices is at all times supported
75 while being carried or stored in the machine.

A tension device comprising the roller 39 carried upon the mounting 34 is adapted to engage with the ribbon after it has passed between the rollers 31 and 32 and put the re-
80 quired amount of tension thereon. This tension roller may be adjusted by any desired means.

A switch 41 suitably pivoted at 42 above the ribbon as it passes over the rollers 30
85 and 31; has a part 43 which is adapted to rest upon the length of ribbon between these two rollers, the construction being such that when the ribbon is taut the parts of the switch remain in the position shown in Fig-
90 ure 1 of the drawings. In the event, however, of the ribbon breaking, this switch member is adapted by gravity to fall downwardly, whereby the switch will be operated
95 to open a circuit breaker in and stop operation of the machine and display.

Having thus described this embodiment of my invention, the manner in which the same operates, which should be largely ob-
100 vious, may now be understood:

In threading the ribbon through the machine, it is merely necessary to pass over the upper series of rollers depressing loops of the perforated ribbon between the rollers so
105 that the ribbon hangs in convolute form in the frame of the machine. Each convolution may then be pulled downwardly and the roll 12, directly thereunder, swung downwardly to engage the inside of the loop formed by the ribbon. When all the rolls,
110 or such number of them as is necessary to accommodate a particular length of ribbon, have been engaged therewith, as shown in Figure 1 of the drawings, a locking member
115 44, pivoted to the rail 8, may be swung to the position shown in Figure 1 of the drawings, so that the flange 45 thereof will pass over the ends of the shafts 13 of the rollers, thereby preventing them from swinging up-
120 wardly under the tension of the ribbon. This locking member may be held in the position shown as by means of the key 46.

Thus it will be seen that ribbons of various lengths may be employed in the apparatus and effectively carried, by reason of the
125 fact that one or more of the rolls may be moved into inoperative position. Moreover, the adjusting screw 18 of the hanger device 16 may be employed to raise or lower the entire frame 7 to meet different requirements
130

as to length of ribbon, or to properly tension the same, whereby the ribbon will move smoothly and without any danger of becoming deranged or tangled as it passes through the machine.

It will accordingly be seen that I have provided a construction well adapted to attain, among others, all the aims and objects above pointed out, in an exceedingly simple yet efficient manner. By means of this construction the slack of an endless band of ribbon, such as employed in such machines, may be effectively taken up and the ribbon safely stored and carried as it is moved progressively through the machine.

As many changes could be made in this construction without departing from the scope of the following claims, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative only and not in a limiting sense.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In controlling apparatus for electric signs, the combination with switching apparatus provided with a plurality of contacts, of an endless perforated band adapted selectively to determine the operation of the contacts of said switching apparatus, means for moving said band through said switching apparatus, a plurality or series of rolls which support and hold the unused or slack

portion of said band in convolute form as it passes toward or from said switching apparatus, a fixed support for one of said series of rolls, and a movable support for another of said series of rolls, the individual members of said last named series of rolls being bodily movable, whereby they may be disengaged from the convoluted portions of said band.

2. In controlling apparatus for electric signs, the combination with switching apparatus provided with a plurality of contacts, of an endless perforated band adapted selectively to determine the operation of the contacts of said switching apparatus, means for moving said band through said switching apparatus, two series of rolls about which the unused or slack portion of said band passes on its journey toward and from said switching apparatus, a fixed support for one of said series of rolls, a hinged frame for supporting the other of said series of rolls, and means for adjustably supporting one end of said hinged frame, and the individual members of said series of rolls of said hinged frame being pivotally mounted so that they may be swung into and out of engagement with said band.

In testimony whereof I affix my signature in the presence of two witnesses.

FRANK C. REILLY.

Witnesses:

FRED EVANS,
EMMA WEINBERG.